

Missouri State Implementation Plan Revision

St. Louis Moderate Nonattainment Area Plan for the 2015 Ozone Standard

**Prepared for the
Missouri Air Conservation Commission**



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**Missouri Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program
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TABLE OF CONTENTS

Executive Summary	1
1. Background	2
2. Moderate Ozone Nonattainment Area Plan Requirements	5
2.1 Public Participation Requirements for State Implementation Plans	5
2.2 Modeled Attainment Demonstration: Section 172(c)(1)	5
2.3 Plan Requirements for Marginal Ozone Nonattainment Areas	6
2.4 Reasonable Further Progress Plan: Section 182(b)(1).....	6
2.5 Reasonably Available Control Technology (RACT): Section 182(b)(2)	6
2.6 Gasoline Vapor Recovery: Section 182(b)(3).....	7
2.6 Motor Vehicle Inspection and Maintenance: Section 182(b)(4).....	7
2.7 General Offset Requirement: Section 182(b)(5).....	7
2.7 Contingency Plan: Section 172(c)(9).....	8
3. St. Louis Nonattainment Area Ambient Ozone Monitoring.....	9
3.1 Air Quality Monitoring Network	9
3.2 Ambient Air Monitoring Data	10
4. Transportation Conformity	12
4.1 Motor Vehicle Emissions Budgets for Attainment Year (2023)	12
5. Contingency Plan	13
6. Public Participation	15
7. Conclusion	16

LIST OF FIGURES

Figure 1: Map of St. Louis Bi-State Moderate Ozone Nonattainment Area	4
Figure 2: 2023 Ozone Monitoring Network for St. Louis (MO/IL) Nonattainment Area.....	9

LIST OF TABLES

Table 1: St. Louis Nonattainment Area Ozone Design Values: 2017-2022	11
Table 2: St. Louis Nonattainment Area 2023 MVEB (tons per ozone season day)	13
Table 3: OYW of RFP Reductions (tons per July weekday)	14
Table 4: Contingency Measure 2024 MVEB (tons per July weekday)	15

LIST OF APPENDICES

Appendix A: Reasonable Further Progress Demonstration	
Appendix B: Inspection and Maintenance Program - 2023 Revision	
Appendix C: Reasonably Available Control Technology Demonstration	
Appendix D: Attainment Demonstration Modeling Technical Support Document	
Appendix E: Public Comments and Responses	

Executive Summary

The purpose of this document is to address the Clean Air Act (CAA) requirements for moderate ozone nonattainment areas for the Missouri portion of the St. Louis nonattainment area under the 2015 ozone National Ambient Air Quality Standards (2015 ozone standard). The Missouri Department of Natural Resources' Air Pollution Control Program (air program) has prepared this state implementation plan (SIP) revision (plan) in accordance with the U.S. Environmental Protection Agency (EPA) SIP requirements rule for the 2015 ozone standard.¹ This plan addresses all required elements for moderate ozone nonattainment area plans. This includes an attainment demonstration using a photochemical modeling analysis, requirements for reasonable further progress, reasonably available control technology requirements, a vehicle emission inspection and maintenance program, and a contingency plan to be enacted if the area fails to make reasonable further progress or to attain the standard by the attainment deadline for moderate nonattainment areas.

The Missouri portion of the St. Louis nonattainment area includes St. Louis City, the counties of St. Charles, Jefferson, and St. Louis, and Boles Township in Franklin County (hereafter, referred to as the St. Louis nonattainment area). The St. Louis nonattainment area is classified as a moderate ozone nonattainment area. CAA Section 182(b) includes the SIP requirements for moderate ozone nonattainment areas. This includes an attainment demonstration using a photochemical modeling analysis, a demonstration of reasonable further progress, reasonably available control technology requirements, a vehicle emission inspection and maintenance program, and a contingency plan to be enacted if the area fails to attain the standard by the attainment deadline for moderate nonattainment areas.

Other CAA elements for moderate areas include all SIP requirements that apply to marginal nonattainment areas: non-attainment new source review (NNSR) permitting requirements, including a more stringent general offset requirement, and motor vehicle emission budgets (MVEB) to be used in regional emissions analyses for transportation conformity determinations. The air program has already addressed all the marginal area requirements in the marginal nonattainment area plan for the St. Louis area under the 2015 ozone standard, which EPA approved on February 7, 2023.² However, the reasonable further progress demonstration included in this plan is updating the 2017 baseline emissions inventory for the area. The permitting requirements are already addressed in Missouri's SIP approved New Source Review permitting program. The motor vehicle emission budgets are newly established in this plan. The budgets are created for the year 2023, which is the attainment year in the modeled attainment demonstration included in this plan.

The development and subsequent EPA approval of the SIP elements addressed in this plan is a CAA requirement for all nonattainment areas classified as moderate under the 2015 ozone standard. The air program developed this plan in accordance with the CAA, the Missouri Air Conservation Law, corresponding state and federal regulations, and applicable EPA guidance.

¹ 83 FR 62998, December 6, 2018.

² 88 FR 7885, February 7, 2023.

1. Background

On October 26, 2015, EPA finalized a revised standard for the criteria pollutant ground-level ozone.³ The revision strengthened the primary and secondary standards, decreasing them from 0.075 parts per million (ppm) to 0.070 ppm, based on the three-year average of the annual fourth-highest eight-hour daily maximum concentrations. This revised ozone standard became effective on December 28, 2015.

When EPA revises a standard for a criteria pollutant, the CAA requires states to review air quality monitoring data and submit boundary designation recommendations. On September 30, 2016, the air program submitted its original boundary recommendation for the 2015 ozone standard to EPA. The original recommendations were based on the ozone air quality monitoring data for the three years of 2013-2015. Then, in February 2018, the air program updated the boundary recommendations based on air quality data for the three years of 2015-2017.

In a letter to the Governor of Missouri, dated April 30, 2018, EPA outlined their final decision for boundary designations in Missouri under the 2015 ozone standard. EPA designated the City of St. Louis, the counties of St. Louis and St. Charles, and Boles Township in Franklin County as nonattainment and all other areas of the state as attainment/unclassifiable. EPA published these final designations in the Federal Register on June 4, 2018 with an effective date of August 3, 2018.⁴ In this initial designation action, EPA designated Jefferson County as attainment for the 2015 ozone standard. However, on June 14, 2021, in response to a D.C. Circuit Court of Appeals remand of the initial designations for several counties across the country, EPA revised the initial designation for Jefferson County to nonattainment. In this action, EPA added Jefferson County to the St. Louis nonattainment area for the 2015 ozone standard with an effective date of July 14, 2021.⁵ In the final designations, EPA classified the St. Louis nonattainment area as marginal, which is the least severe of the possible ozone nonattainment classifications.

On September 8, 2021, the air program submitted a SIP revision containing the required marginal ozone nonattainment area SIP elements for the Missouri portion of the St. Louis nonattainment area. EPA approved Missouri's marginal St. Louis ozone nonattainment area plan on February 7, 2023.⁶ The attainment deadline for marginal nonattainment areas under the 2015 ozone standard was August 3, 2021. Since this date fell in the middle of the 2021 ozone season (the ozone season is from March 1 through October 31), EPA made determinations as to whether areas attained by their mandatory deadlines using ozone monitoring data from the three-year period of 2018-2020. During that three-year period, the design value at two of the ozone monitors located in the St. Louis nonattainment area were still in violation of the 2015 ozone standard. However, by the end of the 2021 ozone season, all monitors located in the bi-state St. Louis nonattainment area had come into compliance with the 2015 ozone standard.

³ 80 FR 65292, October, 26, 2015.

⁴ 83 FR 25776, June 4, 2018.

⁵ 86 FR 31438, June 14, 2021.

⁶ 88 FR 7885, February 7, 2023.

In the 2021-2022 winter, the air program developed a maintenance plan and redesignation request for the St. Louis nonattainment area. The air program submitted the redesignation request to EPA on April 8, 2022. Then on April 13, 2022, EPA proposed to reclassify over 20 marginal ozone nonattainment areas across the country to moderate for failing to attain the 2015 ozone standard by the marginal nonattainment area attainment deadline of August 3, 2021.⁷ The St. Louis nonattainment area was included among the list of nonattainment areas proposed for reclassification in this rule even though the area had come into compliance by the end of the 2021 ozone season. Further, since the air program had submitted a maintenance plan and redesignation request prior to the effective date of the reclassification, the area would have been absolved of the moderate nonattainment SIP requirements following redesignation to attainment despite the reclassification to moderate.

However, on July 11, 2022, one of the ozone monitors located in the Illinois portion of the St. Louis ozone nonattainment area (Alton, Illinois) recorded a preliminary exceedance of the ozone standard that, following certification of the 2022 ozone monitoring data, resulted in a violation of the 2015 ozone standard based on the three-year period from 2020-2022. Since the primary requirement for a nonattainment area to be redesignated to attainment is that EPA must determine that all ozone monitors in the nonattainment area are in compliance with the standard, the preliminary violation prevented EPA from approving the maintenance plan and redesignating the area to attainment. Therefore, knowing that reclassification of the area to moderate was imminent following the measurement of the preliminary violation at the Alton, Illinois monitor, the air program began developing the required moderate ozone nonattainment SIP components for the Missouri portion of the St. Louis ozone nonattainment area.

On October 7, 2022, EPA finalized the reclassification of 22 areas across the country, including the St. Louis ozone nonattainment area, from marginal to moderate nonattainment for the 2015 ozone standard.⁸ The reclassifications became effective November 7, 2022. Based on mandatory timelines in the CAA, the deadline for the newly reclassified areas to submit the required moderate nonattainment area SIP elements was January 1, 2023, less than two full months following the effective date of the reclassifications.

Attainment dates and SIP submission requirements are dependent upon area classification designations. Pursuant to section 182(b) of the CAA, moderate areas have up to six years from the initial designation to attain the standard. The new moderate area attainment deadline for the St. Louis ozone nonattainment area to attain the 2015 ozone standard is August 3, 2024, unless EPA grants a one-year extension pursuant to CAA Section 181(a)(5).

St. Louis is a bi-state nonattainment area including counties in both Missouri and Illinois. In 2018, EPA designated Madison and St. Clair counties in Illinois as part of the bi-state St. Louis nonattainment area. However, in June 2021, EPA revised the initial attainment designation for Monroe County to nonattainment. This action added Monroe County to the Illinois portion of the St. Louis nonattainment area. EPA promulgated the addition of Monroe County in Illinois and

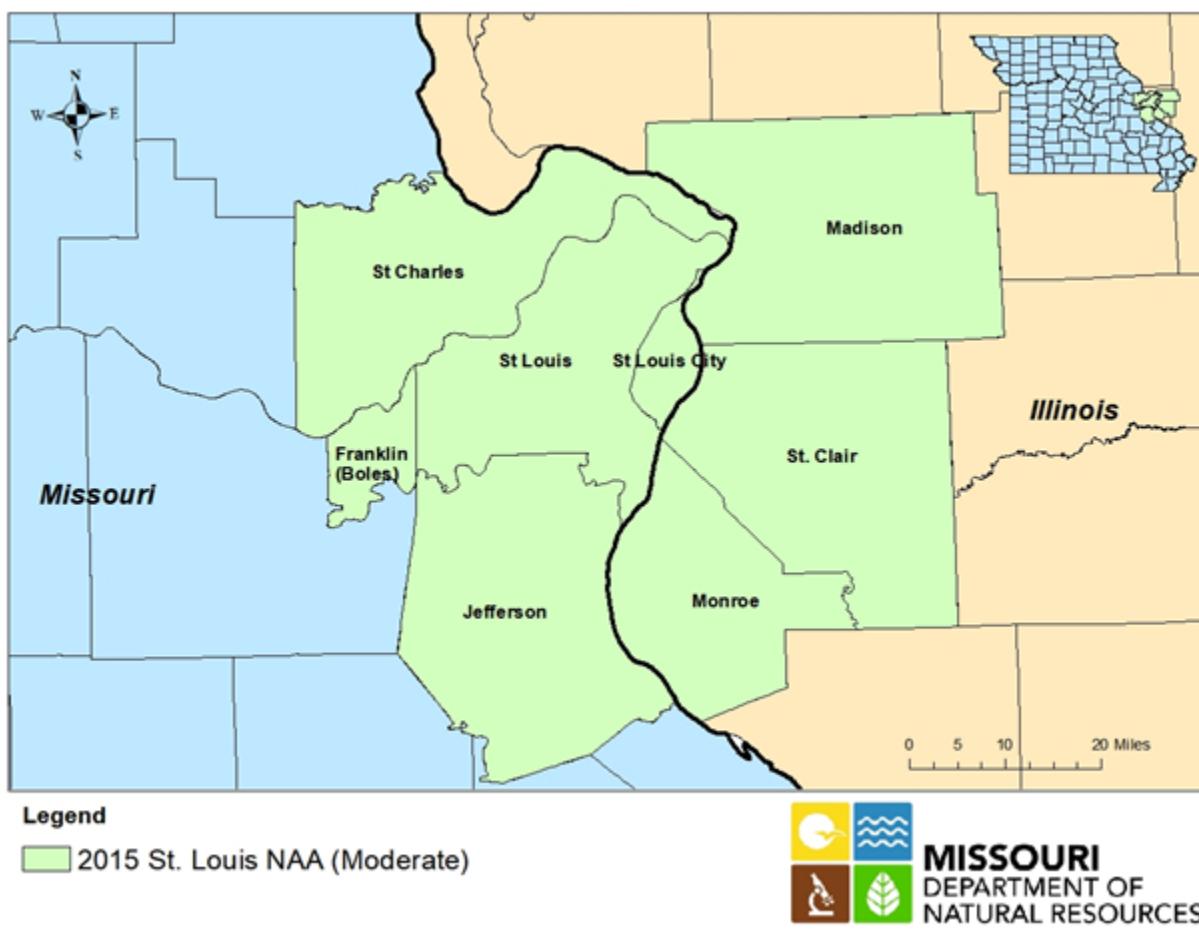
⁷ 87 FR 21842, April 13, 2022.

⁸ 87 FR 60897, October 7, 2022.

Jefferson County in Missouri in the same action. Figure 1 presents a map showing the bi-state St. Louis nonattainment area. The following is a list of the township and counties contained in the St. Louis Missouri-Illinois bi-state nonattainment area under the 2015 ozone standard:

- St Charles County, MO
- St. Louis County, MO
- St. Louis City, MO
- Jefferson County, MO
- Boles Township, Franklin County, MO
- Madison County, IL
- St. Clair County, IL
- Monroe County, IL

Figure 1: Map of St. Louis Bi-State Moderate Ozone Nonattainment Area



2. Moderate Ozone Nonattainment Area Plan Requirements

CAA Section 182(b) lists the required elements for moderate ozone nonattainment area plan submissions. In addition, CAA Section 110(a) includes SIP requirements for all areas, and CAA Section 172(c) includes requirements for all nonattainment areas for any criteria pollutant. Some of the required elements in CAA 172(c) are specifically excluded as requirements for areas classified as marginal. Therefore, those elements were not addressed in the 2021 marginal nonattainment area plan for the St. Louis nonattainment area; however those elements became required upon the reclassification of the area to moderate. Within this chapter of the plan, each section below corresponds to a required SIP element specified in the CAA that applies to moderate ozone nonattainment areas and provides an explanation of how the air program addresses each of these elements in the St. Louis nonattainment area.

2.1 Public Participation Requirements for State Implementation Plans

CAA Section 110(a)(2) requires all state plans undergo a public notice period allowing all members of the public to submit comments on the plan. Chapter 6 of this plan discusses how the air program is satisfying the public participation requirements for this moderate ozone nonattainment area plan.

2.2 Modeled Attainment Demonstration: Section 172(c)(1)

CAA Section 172(c)(1) requires that all nonattainment areas implement a plan to provide for attainment as expeditiously as practicable, but no later than the applicable attainment deadline for the nonattainment area. CAA Section 182(a) specifies that the requirements for marginal nonattainment areas apply in lieu of any requirement to submit a demonstration that the area will attain the standard by the applicable deadline. While there is no requirement explicitly stated in CAA Section 182(b) that moderate areas submit a modeled attainment demonstration, the clear exemption clause for this SIP element is not included in the moderate area requirements. EPA's SIP requirements rule includes a requirement for moderate ozone nonattainment areas to submit a photochemical modeling analysis that demonstrates that the nonattainment area will attain the standard by the moderate nonattainment area deadline. This requirement is codified at 40 CFR 51.1308.

Appendix D of this plan provides the required attainment demonstration developed using a state-of-the-art photochemical modeling analysis. This appendix is designed as a technical support document detailing all modeling inputs developed and used in the analysis along with the results. The air program used the Comprehensive Air Quality Model with Extensions (CAMx) version 7.10 as part of this analysis. The modeling results are used to identify ozone monitoring sites that may have nonattainment or maintenance concerns for the 2015 ozone standard by the August 3, 2024 attainment date. Because the attainment date is during the 2024 ozone season and complete 2024 data will not be available by the attainment date, the effective attainment deadline is the end of the 2023 ozone season. As a result, 2023 was selected as the projection year for the modeling analysis.

Overall, the 2023 nitrogen oxides (NO_x) and volatile organic compound (VOC) ozone season emissions are projected to decrease in Missouri and Illinois compared to the base model year of 2016. The future year emissions are based on known controls occurring across the country and some updated local requirements included in this moderate ozone nonattainment area plan. The updated local requirements include updated emission projections based on enforceable control requirements for some stationary sources and also model the regulatory limit for on-road mobile source emissions included in this plan based on the motor vehicle emission budgets established for transportation conformity purposes. Based on all the assumptions included in EPA's latest national modeling platform, and the updated emission projections taking into account the provisions included in this plan, the CAMx model predicts all monitors in the St. Louis nonattainment area will attain the 2015 ozone standard in the future year of the modeling analysis (2023).

2.3 Plan Requirements for Marginal Ozone Nonattainment Areas

CAA Section 182(b) specifies that the plans for moderate ozone nonattainment areas shall include all the requirements listed in section 182(a) for ozone marginal area plans. These requirements are an Emissions Inventory, a NNSR Permitting Program, Source Emissions Statements, and a General Offset Requirement. On September 8, 2021, the air program submitted a SIP revision containing the required marginal ozone nonattainment area SIP elements for the Missouri portion of the St. Louis nonattainment area. EPA approved Missouri's marginal St. Louis ozone nonattainment area plan on February 7, 2023.⁹ As such, these elements have already been addressed and federally approved into Missouri's SIP.

2.4 Reasonable Further Progress Plan: Section 182(b)(1)

CAA Section 182(b)(1) requires states with moderate nonattainment areas to submit a plan to ensure a 15 percent reduction in VOC and/or NO_x within six years of the nonattainment designation. The air program developed a demonstration of reasonable further progress (RFP) for the Missouri portion of the St. Louis nonattainment area showing a reduction greater than the required 15 percent. This demonstration is included in Appendix A. The demonstration includes an updated 2017 baseline emission inventory and a projected 2023 future year emission inventory for all anthropogenic emission sources of NO_x and VOC. The demonstration projects that VOC and NO_x emissions between 2017 and 2023 will decrease 4.53 percent and 23.44 percent, respectively. Adding the VOC and NO_x percentage reductions results in a total percent decrease of 27.97, which exceeds the minimum RFP requirement of 15 percent as specified in CAA Section 182(b)(1).

2.5 Reasonably Available Control Technology (RACT): Section 182(b)(2)

CAA Section 182(b)(2) requires states with moderate nonattainment areas to include requirements to implement all RACT for affected sources of NO_x and VOC. RACT is defined as

⁹ 88 FR 7885, February 7, 2023.

the lowest emissions limitation that a particular source is capable of meeting considering technological and economic feasibility. The air program developed a RACT demonstration satisfying these requirements through enforceable and practical state and federal rules. In addition, the RACT demonstration includes five newly executed Consent Agreements between the air program and major emitting sources located in the nonattainment area. This demonstration and the new Consent Agreements are included as Appendix C to this plan.

2.6 Gasoline Vapor Recovery: Section 182(b)(3)

CAA Section 182(b)(3) requires states with moderate nonattainment areas include requirements for gasoline vapor recovery systems for owners and operators of gasoline dispensing systems. However, in 1994 EPA promulgated a rule¹⁰ requiring manufacturers of light-duty vehicles and trucks to include refueling vapor recovery systems in the design of their vehicles. As a part of this rulemaking, EPA no longer requires states to include requirements originally included in 182(b)(3).

2.6 Motor Vehicle Inspection and Maintenance: Section 182(b)(4)

CAA Section 182(b)(4) requires states with moderate nonattainment areas to include provisions for a vehicle inspection and maintenance (I/M) program at least as stringent as the federal requirements for EPA's basic I/M program. The air program has operated a vehicle inspection and maintenance program in the St. Louis area since 1984. The air program submitted the most recent update to the non-regulatory I/M SIP component to EPA on November 12, 2019, with a subsequent update to the state's I/M rule for the St. Louis area (10 CSR 10-5.381 Onboard Diagnostics Motor Vehicle Emissions Inspection) on March 2, 2022. EPA fully approved the updated state rule and partially approved the non-regulatory I/M SIP on September 13, 2022.¹¹ Appendix B of this plan includes an update to the non-regulatory I/M SIP for the St. Louis area. The air program intends the updated provisions in Appendix B to fully replace the non-regulatory I/M SIP submitted in 2019. These provisions reaffirm the inspection and maintenance program includes Jefferson County, which was removed in the 2019 submission, but included in the update to the state rule for the I/M program. Additionally, these provisions include updated performance standard modeling to demonstrate that the state's I/M program, known as the Gateway Vehicle Inspection Program, meets EPA's basic I/M program requirements, as the CAA requires for moderate ozone nonattainment areas.

2.7 General Offset Requirement: Section 182(b)(5)

CAA Section 182(b)(5) includes the general offset requirement for moderate ozone nonattainment areas. For the purposes of the NNSR permitting program, states must establish, in their moderate nonattainment area plan submission, the emission offset ratio of total VOC emission reductions to total increased VOC emissions to be at least 1.15 to 1.

¹⁰ 59 FR 16262, April 6, 1994.

¹¹ 87 FR 55918, September 13, 2022.

As mentioned in subsection 2.2. of this document, the air program has already addressed the requirements for an NNSR permitting program in the St. Louis marginal nonattainment area plan. The air program NNSR permitting program is codified in Missouri's SIP approved rule 10 CSR 10-6.060 Construction Permits Required. One of the features of NNSR is the requirement for emission offset reductions. This is codified at 10 CSR 10-6.060(7)(C)1, which explicitly references 40 CFR 51.165(a)(3) and (a)(9) related to determining credits for emissions offsets purposes.

The requirements for determining credits for emission offset purposes are codified at 40 CFR 51.165(a)(3). The corresponding offset ratios for each ozone area classification (e.g. 1.15:1 for moderate ozone nonattainment areas) are codified at 40 CFR 51.165(a)(9), which is also included in the state rule. Therefore, the state rule satisfies the CAA Section 182(b)(5) requirement for moderate area plans to contain an emission offset reduction ratio of 1.15:1 as part of the air program's NNSR permitting program.

2.7 Contingency Plan: Section 172(c)(9)

CAA Section 172(c)(9) requires states to include a contingency plan which identifies measures that will be implemented in the event a nonattainment area fails to make RFP or fails to attain by the attainment deadline. The CAA requires that these measures be included in the plan to take effect without further action by the state or EPA following the applicable trigger. Chapter 5 of this plan includes the contingency plan for the Missouri portion of the St. Louis nonattainment area. The plan is designed to take effect without further action following an EPA determination that the area failed to make RFP or failed to attain the 2015 ozone standard by the applicable attainment deadline.

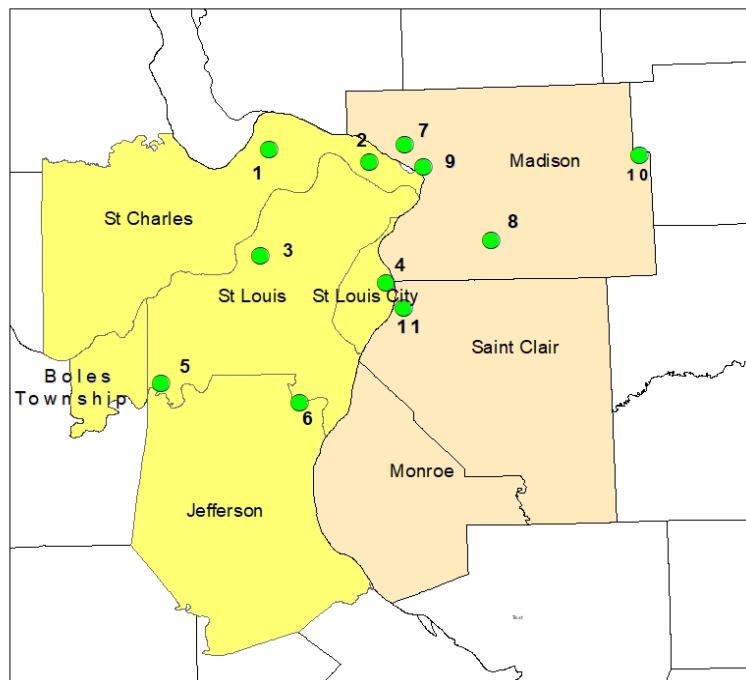
3. St. Louis Nonattainment Area Ambient Ozone Monitoring

This chapter presents recent ozone monitoring information at regulatory ozone monitors located in the bi-state St. Louis (MO/IL) nonattainment area.

3.1 Air Quality Monitoring Network

The states of Missouri and Illinois operate separate ozone monitoring networks in their respective portions of the St. Louis ozone nonattainment area. EPA also operates one site in Madison County, IL (Alhambra). In 2023, there are 16 total sites that monitor ozone in the bi-state St. Louis (MO/IL) nonattainment area and surrounding counties. Eleven of these sites are located within the nonattainment area; six in Missouri and five in Illinois (Figure 2). In addition, Missouri and Illinois each operate one monitor upwind and downwind of the nonattainment area. The upwind monitors outside the nonattainment area are located in Bonne Terre, (Ste. Genevieve County), Missouri and in Hickory, (Randolph County), Illinois. Downwind monitors outside of the nonattainment area are located in Foley, (Lincoln County), Missouri and Nilwood, (Macoupin County), Illinois.

Figure 2: 2023 Ozone Monitoring Network for St. Louis (MO/IL) Nonattainment Area



Legend: Active Ozone Monitoring Stations

Missouri

- 1 Orchard Farm
- 2 West Alton
- 3 Maryland Heights
- 4 Blair Street
- 5 Pacific
- 6 Arnold West

Illinois

- 7 Alton
- 8 Maryville
- 9 Wood River
- 10 Alhambra
- 11 East Saint Louis



Note: U.S. EPA operates the Alhambra site in Madison County, IL.

40 CFR Part 58 Appendix D includes the ozone monitor network requirements for states and metropolitan statistical areas based on population and air quality status. When EPA finalized the 2015 ozone standard on October 26, 2015, the agency also included revisions to 40 CFR Part 58. Among the revisions was to include requirements for an enhanced ozone monitoring network for any ozone nonattainment area classified as moderate or above. According to the regulation, states must evaluate their monitoring networks in accordance with and implement the necessary changes within two years of the effective date of the moderate nonattainment classification. The CAA Section 182(c)(1) requires an enhanced ozone monitoring network for areas classified as serious or above, but not for moderate areas. EPA's SIP requirements rule for the 2015 ozone standard codified at 40 CFR 51.1300-1319 requires ozone nonattainment area plans to include the requirements codified in the CAA for the applicable classification. As such, the enhanced monitoring plan is not a required SIP element needed for a moderate nonattainment area SIP, but the state is still required to implement the enhanced monitor network requirement in compliance with the air monitoring regulation, 40 CFR 58 Appendix D, within two years of the effective date of the classification of the area as a moderate ozone nonattainment area.

In compliance with 40 CFR Part 58, the air program updates Missouri's monitoring network plan annually. The air program intends to evaluate and implement any necessary changes to comply with the enhanced ozone monitoring requirements in the federal regulation when the air program develops the annual monitoring network plan for 2024.

3.2 Ambient Air Monitoring Data

The 2015 ozone standard is based on an eight-hour ozone design value of 70 parts per billion (ppb). The design value for a monitor is the three-year average of the annual fourth-highest daily maximum eight-hour ozone concentration. For an area to attain the 2015 ozone standard, the design values during the same three-year period at all monitors located in the nonattainment area must be at or below 70 ppb. Table 1 lists the three-year design values from 2017-2022. For each year listed in the table, the three-year design value is based on the three-year period that ends with the applicable year. For example the value for 2017, is the design value from the three-year period of 2015-2017. All values listed in the table are based on quality assured and certified ambient air quality monitoring data in compliance with the requirements of 40 CFR Part 58.

Table 1: St. Louis Nonattainment Area Ozone Design Values: 2017-2022

Ozone Design Values for 3-Year Period Ending on Applicable Year (ppb)								
State	County	Site	2017	2018	2019	2020	2021	2022
MO	St Charles	Orchard Farm	70	72	69	68	66	65
	St Charles	West Alton	72	74	71	71	68	69
	St. Louis City	Blair Street	66	71	69	68	65	67
	St. Louis	Maryland Heights	69	70	68	71	69	68
	St. Louis	Pacific	64	66	65	66	64	63
	Jefferson	Arnold West	68	69	67	67	68	68
IL	Madison	Alton	69	70	68	69	68	71
	Madison	Maryville	68	72	71	68	67	68
	Madison	Wood River	70	71	69	70	69	70
	St. Clair	East St. Louis	67	71	68	67	65	66
	Madison	Alhambra	65	68	66	66	65	67

As shown in the table, during all three-year periods displayed except for 2016-2018, the area had no more than two monitors in violation of the 2015 ozone standard. In the three-year period from 2015-2017, which is the data EPA used to designate the nonattainment area, only one monitor in the area was in violation. Also of note, based on the design values in the three-year period of 2019-2021, every monitor in the nonattainment area, on both the Missouri and Illinois sides were in compliance with the 2015 ozone standard. The general trend in ozone design values from the six years displayed in this table is level or decreasing. However, the 71 ppb design value at the Alton, Illinois site during the three-year period of 2020-2022 has caused the area to go back into violation of the 2015 ozone standard. This is the reason EPA was unable to approve Missouri's maintenance plan for the area and formally redesignate the area back to attainment for the 2015 ozone standard. This, in turn, obligated the air program to develop this plan to address all of the CAA's moderate ozone nonattainment area plan requirements.

4. Transportation Conformity

Transportation conformity is required under CAA Section 176(c) to ensure that transportation plans, transportation improvement programs and federally supported highway transit project activities are consistent with and conform to the purpose of the SIP. This means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant standard or any interim milestones. These requirements are found in CAA Section 176(c)(B)(i), (ii), and (iii). Transportation conformity applies only to those areas that are designated nonattainment, and those areas redesignated to attainment after 1990 (maintenance areas) for transportation-related criteria pollutants: ozone, NO_x, PM_{2.5} and PM₁₀. The transportation conformity program for the St. Louis area is included in Missouri's SIP via 10 CSR 10-5.480, St. Louis Area Transportation Conformity Requirements. Attainment and RFP plans must establish motor vehicle emission budgets (MVEB) for pollutants if motor vehicle emissions of those pollutants contribute to concentrations of a criteria pollutant with an air quality standard. The interagency council of governments use the MVEB in transportation conformity analyses to ensure that emissions from onroad motor vehicles in the area remain below a level sufficient to ensure they do not interfere with the achievement of attainment or maintenance of the relevant standard.

4.1 *Motor Vehicle Emissions Budgets for Attainment Year (2023)*

As discussed in Appendix A, the RFP demonstration included in this moderate ozone nonattainment area plan utilizes a portion of the safety margin in establishing the motor vehicle emission budgets for the Missouri portion of the nonattainment area. Since the projected emission levels for 2023 are lower than needed to demonstrate RFP, the air program consulted with the St. Louis interagency council of governments in developing the required motor vehicle emission budgets for use in this plan. Following the development of the RFP demonstration and RACT analysis, the projected future year emissions inventory resulted in a safety margin for the RFP demonstration. This means that more than the required 15 percent emission reductions for RFP were projected on enforceable control requirements. The amount of emission reductions exceeding the 15 percent RFP requirement are considered a safety margin for the purposes of RFP. As such, the air program utilized a portion of this RFP safety margin in establishing the MVEB for the area. As discussed in more detail in Appendix A, the air program has established MVEB for the attainment year of this plan (2023). These MVEB for the Missouri portion of the nonattainment area, are provided in Table 2.

Table 2: St. Louis Nonattainment Area 2023 MVEB (tons per ozone season day)

Area	2023 VOC MVEB	2023 NO _x MVEB
Missouri portion of St. Louis Nonattainment Area	20.00	46.00

According to EPA's transportation conformity rule (40 CFR Part 93), these MVEB will become applicable following an EPA adequacy determination that the budgets are sufficient for RFP and attainment demonstration purposes for the 2015 ozone standard in the Missouri portion of the St. Louis nonattainment area. The East-West Gateway (EWG) Council of Governments is responsible for developing the transportation determinations for the St. Louis metropolitan statistical area. The interagency council of governments establishes the start date for any transportation improvement plan (TIP) or long range transportation plan (LRTP) for the purposes of transportation conformity. As such, after EPA has determined the MVEB in this plan to be adequate, it will apply to any regional emission analysis conducted by EWG for any TIP or LRTP that is started after the effective date of such adequacy determination.

5. Contingency Plan

CAA Section 172(c)(9) requires states to implement additional measures in the event an area fails to make reasonable further progress or fails to attain the standard by the applicable attainment date. These contingency measures must become effective without further action by the state or EPA. This means that upon an EPA determination that an area failed to make RFP or failed to attain the standard by the attainment deadline, the contingency measure must take effect without further action by the state. Contingency measures must consist of new requirements that are not already included in the control strategy section of the plan.

In past EPA actions, the agency has included a presumptive expectation that a contingency plan should include measures needed to achieve one year's worth (OYW) of progress as required by the CAA RFP requirements for moderate ozone nonattainment areas. This requirement is not specified in the CAA, nor codified in the code of federal regulations; however, EPA has applied it through guidance and numerous agency actions on ozone nonattainment area plans for previous ozone standards. As such, the air program has developed its contingency plan to achieve the precedential OYW of progress through a new enforceable measure to take effect without further action following an EPA determination that the contingency plan for the area has been triggered.

The St. Louis nonattainment area was designated nonattainment with an effective date of August 3, 2018. Since the designation fell within the middle of the ozone season, which runs from March 1 through October 31, it cuts the amount of time to attain the standard from six years following designation to five years because the deadline is August 3, 2024. This means the ozone monitoring data from 2023 will be the last year available before EPA is obligated to determine whether the area attained by the attainment deadline. Therefore, since the 15 percent reasonable further progress requirements apply five years following the original nonattainment designation for moderate areas, OYW of progress is equal to three percent of the baseline year emissions inventory for the nonattainment area.

For RFP, EPA's SIP requirement rule allows the percent reductions from NO_x emissions and the percent reductions from VOC emissions in the St. Louis nonattainment area to be added together to achieve the total 15 percent emission reduction requirement to demonstrate that RFP requirements have been met. The contingency plan included in this moderate ozone nonattainment area plan is based on this same principle. In this plan, the air program is applying the precedential OYW requirement for the contingency plan to provide for enforceable emission controls that will achieve a total of three percent emission reductions from the emission inventory baseline year (2017) for NO_x and VOC combined. These enforceable reductions are in excess of the emission reductions used to demonstrate both reasonable further progress and attainment of the 2015 ozone standard in the modeled attainment demonstration included in this plan.

Assuming an equal distribution of reductions of 1.5 percent for VOC and 1.5 percent for NO_x from the base year inventory (2017), the OYW of contingency measure reductions are calculated using the following equation, with resulting values presented in Table 3.

$$OYW \text{ of RFP} = 2017 \text{ Base Year Emissions} \times \text{Percent Reduction}$$

Table 3: OYW of RFP Reductions (tons per July weekday)

Pollutant	2017 Base Year Emissions	Percent Reduction	OYW of RFP Reductions
VOC	128.82	1.5%	1.90
NO _x	168.97	1.5%	2.53

As discussed in Chapter 4 of this document, the MVEB for the St. Louis area utilized a portion of the projected safety margin from the RFP plan and attainment demonstration included in this moderate ozone nonattainment area plan. The purpose of utilizing a portion of the safety margin for transportation conformity is to ensure that growth in motor vehicle populations or vehicle miles travelled are not constrained to projected levels if unnecessary to demonstrate attainment or RFP. This ensures that if VMT or vehicle population projections are lower than what actually occurs, or if the vehicle age distribution becomes older than projected in the plan, the area can still demonstrate conformity with the SIP. The MVEB acts as an enforceable control measure for the region, because if a transportation plan is unable to demonstrate conformity with the budgets in a regional emissions analysis, it could result in the withholding of federal highway funding for the nonattainment area.

The contingency plan included in this moderate ozone nonattainment area plan will further constrain the MVEB if triggered. The earliest the contingency plan may be triggered is the attainment deadline for moderate areas, August 3, 2024. As such the contingency plan included in this moderate ozone nonattainment area plan is an updated MVEB for the analysis year 2024. The updated MVEB for 2024, should the contingency plan be triggered, is provided below in Table 4. These contingency MVEB reflect a reduction equal to 1.5 percent of the total anthropogenic NO_x and VOC emissions included in the 2017 baseline emission inventory for the nonattainment area. This represents OYW of RFP, thus satisfying the precedential requirement for contingency plans.

Table 4: Contingency Measure 2024 MVEB (tons per July weekday)

Pollutant	2023 MVEB	2024 (or later) MVEB Following Contingency Plan Trigger
VOC	20	18.10
NO _x	46	43.47

In the event EPA promulgates a final action determining that the St. Louis nonattainment area either did not attain the 2015 ozone standard by the attainment deadline for moderate ozone nonattainment areas or failed to meet RFP requirements for the 2015 ozone standard, the air program will notify the EWG that the contingency plan has been triggered. If a transportation conformity determination process requiring a regional emissions analysis begins after the air program notification that this contingency plan has been triggered, then the transportation conformity determination and regional emissions analysis must utilize the 2024 MVEB in Table 4. The interagency council of governments is responsible for determining the official start date for all transportation conformity determination processes in the St. Louis metropolitan statistical area.

Through this SIP revision, the air program will request that EPA find the 2024 contingency measure MVEB adequate at the same time the agency makes its adequacy finding for the 2023 MVEB. This will ensure regulatory certainty for the transportation conformity process in the event this contingency plan is triggered.

6. Public Participation

In accordance with CAA Section 110(a)(2), the Missouri Air Conservation Commission (MACC) held a public hearing and comment period prior to the adoption of this plan and subsequent submittal to EPA. The air program notified the public and other interested parties of the public hearing and comment period at least 30 days prior to the public hearing for this plan. Specifically:

- Notice of availability of the proposed plan and announcement of the public hearing was posted on the air program website by June 26, 2023.
- The MACC held a public hearing to receive comments for the proposed plan on July 27, 2023.
- The air program opened a public comment period after posting the proposed plan on the air program's website on June 26, 2023. The public comment period closed on August 3, 2023, seven days after the public hearing.

Appendix E of this plan includes a summary of all comments received and the air program's corresponding responses. It also includes a copy of every comment received on the proposed plan during the public comment period.

7. Conclusion

Through this plan submission, the air program satisfies all of the moderate nonattainment area plan submission obligations for the Missouri portion of the St. Louis nonattainment area pursuant to CAA Sections 110(a), 172(c), 182(a), and 182(b). The air program requests EPA to approve this plan into to the Missouri State Implementation Plan.

This document includes appendices addressing the following requirements:

1. Appendix A includes the RFP demonstration and an updated 2017 baseline year emission inventory;
2. Appendix B includes an updated non-regulatory I/M SIP revision for the St. Louis ozone nonattainment area. This I/M SIP revision is intended to fully replace all other non-regulatory I/M SIP revisions for the Missouri portion of the St. Louis ozone nonattainment area.
3. Appendix C includes a RACT demonstration for major sources located in the Missouri portion of the St. Louis ozone nonattainment area. The Appendix includes five (5) new Consent Agreements with enforceable emission control requirements designed to ensure the RACT requirements for major sources of both NO_x and VOC emissions are satisfied.
4. Appendix D includes the modeled attainment demonstration, utilizing a state-of-the-art photochemical modeling analysis based largely on EPA's national modeling platform developed for states to use in SIP development.

Through the submission of this SIP revision, the air program is requesting that EPA promulgate a federal rule approving Missouri's SIP as satisfying all CAA SIP requirements for moderate ozone nonattainment areas. In doing so, the air program requests that EPA replace the currently approved non-regulatory I/M SIP with the replacement non-regulatory I/M SIP included in Appendix B of this plan. The air program also requests that EPA find the 2023 MVEB adequate for use in transportation conformity determinations for the 2015 ozone standard for the Missouri portion of the St. Louis nonattainment area. In doing so, the air program also requests EPA to find the 2024 contingency measure MVEB adequate to take effect in the event the contingency plan is triggered. Finally, the air program requests that EPA approve the five consent agreements included in Appendix C of this plan into Missouri's SIP at 40 CFR 52.1320(d). The air program prepared this moderate ozone nonattainment area SIP in accordance with the CAA, the Missouri Air Conservation Law, corresponding state and federal regulations, and applicable EPA guidance.